

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An information processing system, comprising:
a first computing device comprising a first port and a second port and configured
to:
receive, ~~through a first port connected to~~ from a first network coupled to
the first port, an initialization packet originating from a client;
~~in response to at least the initialization packet~~, output a response packet to
the client;
receive, ~~through the first port~~, from the first network coupled to the first
port, a request packet originating from the client; and
~~in response to at least the request packet and based on at least a state of at~~
~~least one of the~~ first computing device and a second computing device, selectively output,
~~through a second port connected to~~ a second network coupled to the second port and that is ~~not~~
~~the same as~~ logically separate from the first network, the request packet to the second computing
device.
2. (Previously Presented) The system of Claim 1 wherein the first
computing device comprises a network interface card.
3. (Previously Presented) The system of Claim 1 wherein the second
computing device is configured to perform an operation of a software application in response to
receipt of a request packet.

4. (Previously Presented) The system of Claim 3 wherein the software application is a socket-based application.

5. (Previously Presented) The system of Claim 1 wherein the initialization packet is addressed by the client to the first computing device, and wherein the first computing device is configured to receive the initialization packet in response to the addressing.

6. (Previously Presented) The system of Claim 3 wherein the operation includes outputting a response packet to the client, and wherein the first computing device is configured to:

in response to at least the request packet and the state, selectively output the request packet to the second computing device for outputting the response packet to the client, such that the output response packet bypasses the first computing device.

7. (Previously Presented) The system of Claim 1 wherein the first network comprises a global computer network.

8. (Previously Presented) The system of Claim 7 wherein the second network comprises a local area network.

9. (Previously Presented) The system of Claim 1 wherein the first computing device is configured to:

in response to at least the initialization packet, establish a data structure associated with a connection with the client; and

in response to at least the request packet and the state, selectively output a reference to the data structure to the second computing device for associating an application of the second computing device with the connection.

10. (Previously Presented) The system of Claim 1 wherein the first computing device is configured to:

in response to at least the initialization packet, establish a data structure associated with a connection with the client, the data structure including a group of sequence numbers associated with the connection.

11. (Previously Presented) The system of Claim 10 wherein the first computing device is configured to:

in response to at least the request packet and the state, selectively output a reference to the data structure to the second computing device for performing an operation in response to receiving the reference to the data structure, the operation including outputting a response packet to the client according to the group of sequence numbers, such that the output response packet bypasses the first computing device and appears to the client as received from the first computing device.

12. (Original) The system of Claim 10 wherein the group of sequence numbers includes at least one start sequence number, at least one current sequence number, and at least one acknowledgement sequence number.

13. (Previously Presented) The system of Claim 1 wherein the first computing device is configured to:

in response to at least the initialization packet, establish a data structure associated with a connection to the client, the data structure including an address of the first computing device; and

in response to at least the request packet and the state, selectively output a reference to the data structure to the second computing device for performing an operation in response to receiving the reference to the data structure, the operation including outputting a response packet to the client with a source address that indicates the address of the first

computing device, such that the output response packet bypasses the first computing device and appears to the client as received from the first computing device.

14. (Original) The system of Claim 13 wherein the address includes an IP address.

15. (Original) The system of Claim 14 wherein the address includes a port.

16. (Original) The system of Claim 15 wherein the port is a TCP port.

17. (Original) The system of Claim 15 wherein the port is a UDP port.

18. (Currently Amended) A method performed by a first computing device of an information processing system, the first computing device ~~connected~~ coupled to a first network via a first port and ~~connected~~ coupled to a second network via a second port, the first and second networks being ~~different~~ logically separate, comprising:

receiving, through the first port, an initialization packet originating from a client;
~~in response to at least the initialization packet~~, outputting a response packet to the client;

receiving, through the first port, a request packet originating from the client; and
~~in response to at least the request packet and based on at least a state of at least one of the first computing device and a second computing device~~, selectively outputting, through the second port, the request packet to the second computing device for performing an operation in response to the request packet.

19. (Previously Presented) The method of Claim 18 wherein the first computing device comprises a network interface card.

20. (Original) The method of Claim 18 wherein the operation is part of a software application.

21. (Previously Presented) The method of Claim 20 wherein the software application is a socket-based application.

22. (Previously Presented) The method of Claim 18 wherein the initialization packet is addressed by the client to the first computing device, and wherein the receiving, through the first port, an initialization packet originating from a client comprises:
receiving the initialization packet in response to the addressing.

23. (Previously Presented) The method of Claim 18, the selectively outputting, through the second port, the request packet to the second computing device for performing the operation in response to the request packet comprising:
selectively outputting, through the second port, the request packet to the second computing device, for outputting a response packet to the client that bypasses the first computing device.

24. (Previously Presented) The method of Claim 18, the first network comprising a global computer network, and further comprising:
receiving the initialization packet through the global computer network.

25. (Previously Presented) The method of Claim 24, the second network comprising a local area network, and further comprising:
selectively outputting the request packet to the second computing device through the local area network.

26. (Previously Presented) The method of Claim 18, comprising:
in response to at least the initialization packet, establishing a data structure that represents a connection with the client; and
in response to at least the request packet and the state, selectively outputting a reference to the data structure to the second computing device for associating an application of the second computing device with the connection.

27. (Previously Presented) The method of Claim 18, comprising:
in response to at least the initialization packet, establishing a data structure that represents a connection with the client, the data structure including a group of sequence numbers associated with the connection.

28. (Previously Presented) The method of Claim 27, further comprising:
in response to at least the request packet and the state, selectively outputting a reference to the data structure to the second computing device for outputting a response packet to the client according to the group of sequence numbers, such that the output response packet bypasses the first computing device.

29. (Original) The method of Claim 27 wherein the group of sequence numbers includes at least one start sequence number, at least one current sequence number, and at least one acknowledgement sequence number.

30. (Currently Amended) The method of Claim 18, further comprising:
in response to at least the initialization packet, establishing a data structure that represents a connection with the client, the data structure including an address of the first computing device; and
~~in response to at least the request packet and the state, selectively outputting a reference to the data structure to the second computing device for outputting a response packet to~~

~~the client with a source address that indicates the address of the first computing device, such that the output response packet bypasses the first computing device.~~

31. (Original) The method of Claim 30 wherein the address includes an IP address.

32. (Original) The method of Claim 31 wherein the address includes a port.

33. (Original) The method of Claim 32 wherein the port is a TCP port.

34. (Original) The method of Claim 32 wherein the port is a UDP port.

35. (Currently Amended) An intelligent network interface device, comprising:
a first port for receiving an IP request packet from a client over a first network;
and

a second port for transmitting the received IP request packet over a second network that is ~~not the same as~~ logically separate from the first network; and

a processor that is structured to:

maintain a state information table; and

selectively transmit the received IP request packet through the second port to a second intelligent network interface device based at least in part on the state information table, so that the second intelligent network interface device causes a response IP packet to be sent transparently to the client.

36. (Previously Presented) The intelligent network interface device of claim 35, further comprising:

a synchronization port for receiving synchronization information, wherein the processor maintains the state information table based at least in part on the received synchronization information.

37. (Previously Presented) The intelligent network interface device of claim 36 wherein the synchronization port comprises a third IP port.

38. (Currently Amended) The intelligent network interface device of claim 35, further comprising:

a third port for selectively transmitting a response packet in response to a received request packet over a third network that is ~~different that~~ logically separate from the first network and the second network.

39. (Currently Amended) A server farm, comprising:

a plurality of servers;

a first network to receive client requests and coupled to a first server of the plurality of servers;

a second network logically separate from the first network, configured to redistribute received client requests and coupled to each of the plurality of servers; and

a third network logically separate from the first and second networks, configured to transmit synchronization information and coupled to each of the plurality of servers, wherein the first server of the plurality of servers is configured to selectively redistribute through the second network a ~~received-client request~~ received via the first network to a second server in the plurality of servers via the second network based at least in part on ~~transmitted~~ synchronization information transmitted via the third network.

40. (Previously Presented) The server farm of claim 39, further comprising:

a router for transmitting a response to a received client request and coupled to the second server in the plurality of servers.

41. (Previously Presented) The server farm of claim 39 wherein the first network is coupled to each of the plurality of servers and each server can receive a client request.

42. (Currently Amended) A computer-readable memory medium containing instructions for controlling a computer processor in a server among a plurality of servers to selectively load balance and direct network requests among ~~a~~ the plurality of servers by:

maintaining a state table associated with the plurality of servers; and

when a client request packet is received ~~through~~ at a first port coupled to a first network, selectively generating, based at least in part on the maintained state table, a first type of network packet for transmission to a client through the first network or a second type of network packet for transmission to another processor residing in a different one of the plurality of servers ~~via~~ at a second port coupled to a second network that is ~~different than~~ logically separate from the first network.

43. (Currently Amended) The computer-readable memory medium of claim 42, further comprising instructions that control the processor by:

when a network packet of the second type is received ~~through~~ at the second port coupled to the second network, selectively generating a third type of network packet for transmission to the client through the first network.

44. (Currently Amended) The computer-readable memory medium of claim 42, further comprising instructions that control the processor by:

when a network packet of the second type is received ~~through~~ at the second port coupled to the second network, selectively generating a third type of network packet for

transmission to the client through a third ~~network~~, network that is logically separate from the first network and the second network.

45. (Currently Amended) The computer-readable memory medium of claim 42 wherein the second type of network packet contains an encapsulation header that identifies a ~~connection to the client via a first network~~, client connection information.

46. (Currently Amended) A server for use in a computer system server farm, comprising:

means for monitoring a state of the server farm;

means for receiving packets from a global network;

means for generating a first type of packet and transmitting the first type of packet via the global network when an initialization packet is received from the global network;

means for selectively generating, based at least in part on the monitored state of the server farm, a second type of packet when a client request packet is received from the global network; and

means for transmitting the second type of packet to another server in the server farm, wherein the means for transmitting the second type of packet ~~is separate from~~ bypasses the means for receiving packets from the global network.

47. (Currently Amended) The server of claim 46 wherein the means for receiving packets from a global network comprises a connection to a first local area network and the means for transmitting the second type of packet comprises a connection to a second local area network that is ~~different~~ logically separate from the first local area network.

48. (Currently Amended) The server of ~~claim 46~~ claim 47 wherein the means for monitoring the state of the server farm comprises a connection to a synchronization network that is logically separate from the first local area network.

49. (Currently Amended) An information processing system, comprising:
a first computer system; and
a second computer system having a network interface card that is structured to:
receive an initialization packet originating from a client;
~~in response to at least the initialization packet,~~ output a response packet to
the client to set up a connection over a network;
receive a request packet originating from the client directed to the
connection; and
~~in response to at least the request packet and~~ based on at least a state of at
least one of the first computer system and the second computing system, selectively output the
request packet to a network interface card of the first computer system thereby migrating the
connection to the first computer system, wherein the network interface card of the second
computer system selectively outputs the request packet to the network interface card of the first
computer system without using IP-IP encapsulation.

50. (Previously Presented) The information processing system of claim
49 wherein the first computer system is structured to transparently output a response packet to
the client in response to the received request packet directed to the connection, such that the
client perceives the response packet is received from the second computer system.

51. (Previously Presented) The information processing system of claim
49 wherein the network interface card of the second computer system selectively outputs the
request packet to the network interface card of the first computer system without invoking
services of the operating system.

52. (Currently Amended) The information processing system of claim 49
wherein the network interface card of the second computer system selectively outputs the request
packet to the network interface card of the first computer system ~~without using IP-IP~~
~~encapsulation and~~ without using TCP splicing techniques.

53. (New) The method of claim 30, further comprising:

in response to at least the request packet and the state, selectively outputting a reference to the data structure to the second computing device for outputting a response packet to the client with a source address that indicates the address of the first computing device, such that the output response packet bypasses the first computing device.

54. (New) A server farm, comprising:

a first network configured to receive client packets;

a second network logically separate from the first network and configured to redistribute the received client packets; and

a third network that bypasses the first network and the second network and is configured to transmit server farm synchronization information.

55. (New) The server farm of claim 54, further comprising:

a plurality of servers coupled to the second and third networks, wherein at least one of the plurality of servers is configured to maintain a state table based at least in part on the transmitted server farm synchronization information.

56. (New) The server farm of claim 55 wherein the at least one of the plurality of servers is configured to redistribute a client packet based at least in part on the state table.

57. (New) A method of servicing client requests, comprising:

receiving a client packet through a first network;

selectively redistributing the received client packet through a second network that is logically separate from the first network;

transmitting synchronization information through a third network that bypasses the first network and the second network; and

selectively migrating a client connection based at least in part on the transmitted synchronization information.

58. (New) The method of claim 57, further comprising:
maintaining a state information table based at least in part on the transmitted synchronization information.

59. (New) The method of claim 57 wherein the selectively redistributing is based at least in part on the transmitted synchronization information.

60. (New) The method of claim 57 wherein the client packet is a request packet, further comprising performing an operation in response to the request packet.

61. (New) The method of Claim 60 wherein the operation is part of a socket-based software application.

62. (New) The method of Claim 57 wherein the first network comprises a global computer network.

63. (New) The method of Claim 62 wherein the second network comprises a local area network.

64. (New) The method of Claim 57 wherein a received client packet is an initialization packet.

65. (New) The method of Claim 64, further comprising:
establishing a data structure that represents a connection with the client.

66. (New) The method of Claim 65 wherein the data structure includes a group of sequence numbers associated with the connection.

67. (New) The method of Claim 66, further comprising:
outputting a response packet to the client according to the group of sequence numbers.